

Before the  
Federal Communications Commission  
Washington, D.C.

In the Matter of	)	
Implementation of Section 255 of the	)	
Telecommunications Act of 1996	)	
Access to Telecommunications Services,	)	WT Docket No. 96-198
Telecommunications Equipment, and	)	
Customer Premises Equipment	)	
by Persons with Disabilities	)	

SUMMARY OF  
REPLY COMMENTS OF THE AMERICAN FOUNDATION FOR THE BLIND

Section 255 establishes affirmative obligations on the part of service providers and equipment manufacturers to make their respective products accessible to persons with disabilities if “readily achievable.” Accordingly, in the NPRM, the Commission proposed to adopt guidelines developed by the Access Board that would provide clear guidance for implementing the statute’s mandate. While AFB did not believe that the NPRM went quite far enough, it was certainly a step in the right direction.

By contrast, some commenters representing industry are asking the FCC to reject key elements of the Access Board’s guidelines, in favor of guidelines and standards that are vague, unclear and insufficient. TIA asks the FCC to define accessibility to mean that equipment is accessible if any part of the equipment is accessible to any person with any disability. That is, a phone could be deemed accessible to the deaf if its input devices were accessible to those with impaired color perception. In addition, TIA and others ask the FCC to declare that it is only readily achievable to provide accessibility across product lines (a term that is never clearly defined). If such a test were adopted, combined with the accessibility test, this could mean that

the requirements of Section 255 would be discharged if a manufacturer made one product in a product line, some feature of which could be used by a person with a disability. AFB is also wary of comments that ask the FCC to import concepts from the ADA into the Section 255 rules, but in a way that is inconsistent with the ADA application of those concepts and inconsistent with Section 255. Perhaps most notable in this regard are proposals to import and then alter the ADA concept of “fundamental alteration” so that a covered entity can self-define the core functions of products or services in a manner that could allow the entity to escape accessibility obligations altogether.

Ultimately, the impact of what these commenters are seeking could lead the Commission to adopt a rule which would result in the development of narrowly targeted, specialized equipment, rather than encouraging development of products and services that are broadly accessible. What Section 255 requires is that person with disabilities have the same choices and opportunities to share in the telecommunications revolution as those who are not disabled.

While many comments are replete with anecdotes, those anecdotes really only suggest that it may not be possible to make each product accessible to every person with every disability. That is no justification for abandoning the goals of Section 255, however. Indeed, if the Commission requires development of an accessibility plan for implementing the Access Board guidelines, industry will begin to learn ways to incorporate accessibility features in products and across product lines, taking advantage of ongoing developments in memory, battery life and the like that make it simpler to add features.

Other proposed modifications to the definitions proposed in the NPRM would serve to undercut the goals of Section 255, and would be at odds with the clear language of the Act.

- Some commenters ask that accessibility obligations be limited to divisions within manufacturing corporations, thus effectively limiting what is “readily achievable.”

- Some commenters ask that the Commission adopt a cost recovery test that is impossible to apply.
- Some commenters seek to define the terms “telecommunications,” “telecommunications equipment” and “customer premises equipment” narrowly, in a manner inconsistent with the statute and with the purposes of Section 255.

In addition, several commenters ask the FCC to adopt procedural rules - statutes of limitation and standing requirements - that are neither necessary or appropriate given the purposes of Section 255, as AFB has shown. The FCC has full authority to hear complaints from all interested parties and to devise appropriate remedies for breach of Section 255, including damage remedies. Further - contrary to the comments submitted by many companies - the FCC should encourage the development of disabilities solutions by establishing an appropriate clearinghouse for information on accessibility.

## TABLE OF CONTENTS

	<u>Page</u>
I. THE COMMISSION MUST MOVE AGGRESSIVELY TO IMPLEMENT SECTION 255.....	1
A. Experience Indicates That Strong Action Is the Only Way To “Ensure Accessibility.” ....	1
B. The Commission Must Be Particularly Wary of Industry Requests That Would Write Section 255 Out of Practical Existence. ....	4
1. The combination of the “accessibility,” “product line,” “fundamental alteration” and “cost recovery” tests proposed by some commenters would seriously thwart the goal of Section 255. ....	4
2. Reading the terms “telecommunications” and “telecommunications equipment” narrowly ignores industry trends and will make future equipment less accessible. ....	9
3. It is critical that the Commission require manufacturers and service providers to develop compliance plans. ....	13
4. The Commission cannot allow industry to escape accessibility obligations simply because meeting the obligations involves some design trade-offs. ....	14
5. Efforts by industry to discourage adoption of the Access Board Guidelines are based on a misunderstanding of those guidelines. ....	15
II. THE COMMISSION SHOULD REJECT MANY OF THE CHANGES SUGGESTED BY INDUSTRY TO DEFINITIONS PROPOSED IN THE NPRM. ....	16
A. Changes Proposed To the Definition of Readily Achievable Are Too Vague To Apply and Are In Many Cases Inconsistent with the Statute. ....	16
1. The “Product Line” Approach As Proposed By Industry Is Too Vague To Apply .....	16
a. The proposed product line approach is seriously flawed. ....	17
b. Product line may be an effective alternative where accessibility is not readily achievable, but it cannot substitute for readily achievable accessibility. ....	24
2. The Fundamental Alteration Test Does Not Work As Industry Suggests. ....	24
3. The Cumulative Cost Test Should Not Operate As Industry Proposes for Purposes of Determining Whether Accessibility is Readily Achievable. ....	26

B.	Both For Purposes of Defining Responsibilities Under Section 255, and for Purposes of Determining Whether Access Is Readily Achievable, the Term Manufacturer Must Reach Parent Corporations.....	27
III.	THE COMMISSION HAS AND SHOULD RETAIN BROAD AUTHORITY TO RECEIVE AND REVIEW COMPLAINTS, AND TO WORK CREATIVELY TO FOSTER ACCESSIBILITY.....	29
A.	The Commission Should Not Adopt Strict Standing Standards. ....	29
B.	The Commission Could Adopt a “Statute of Limitations” On Filing Complaints, But It Would Have To Be Carefully Tailored, and Is Probably Unnecessary. ....	30
C.	The Commission Should Establish An Information Clearinghouse. ....	31
D.	Damages Are An Important Compliance Tool and Are Available. ....	32
E.	The Burden of Proof Must Fall Upon Equipment Manufacturers and Service Providers.....	32
IV.	ADOPTION OF THE ACCESS BOARD GUIDELINES AND CONTINUED EXAMINATION OF CURRENT REGULATORY AND STATUTORY REQUIREMENTS PERTAINING TO INFORMATION SERVICES ARE CRITICAL TO PROVIDING ACCESSIBILITY.....	34
A.	Adoption of the Access Board Guidelines Will Encourage Innovation and the Free Flow of Product Information.....	34
B.	To Provide Continuing Protection for the Disabled, the Commission Does Need to Continually Reexamine Its Treatment of Information and Telecommunications Services. ....	34
	CONCLUSION .....	37

## TABLE OF AUTHORITIES

### Page

#### CASES

A.G. Spalding Brothers Inc. v. F.T.C., 301 F.2d 585 (3d Cir. 1962)..... 19

Independent Living Resources v. Oregon Arena Corporation,  
982 F. Supp. 698 (U.S.D.C. Or. 1997)..... 4, 7, 23

Martin v. PGA Tour, Inc., 994 F. Supp. 1242 (U.S.D.C. Or. 1998) ..... 25

#### STATUTES

47 U.S.C. §153(20) ..... 12

47 U.S.C. §153(43) ..... 10

#### OTHER

Cane, Alan, The Financial Times, "Trying to Connect You" (July 28,1998)..... 35

"A Digital Tornado: The Internet and Telecommunications Policy,"Federal  
Communications Commission, Office of Plans and Policy (March, 1997)..... 35

"A Motorola Creates New Division to Focus on Integrated Information and  
Communication Services for Consumers," Motorola Press Release, August 4, 1998..... 10

ADA Title III Technical Assistance Manual Covering Public Accommodations  
and Commercial Facilities, Department of Justice, at III-3.1000 ..... 11

U.S. Department of Justice at 9 (August, 1996)("Barrier Removal Update") ..... 13

The Best Wireless Phone on the Market," Business Week, August 10, 1998 at p. 60 ..... 18

Before the  
Federal Communications Commission  
Washington, D.C.

In the Matter of	)	
Implementation of Section 255 of the	)	
Telecommunications Act of 1996	)	
Access to Telecommunications Services,	)	WT Docket No. 96-198
Telecommunications Equipment, and	)	
Customer Premises Equipment	)	
by Persons with Disabilities	)	

REPLY COMMENTS OF THE AMERICAN FOUNDATION FOR THE BLIND

**I. THE COMMISSION MUST MOVE AGGRESSIVELY TO IMPLEMENT SECTION 255.**

**A. Experience Indicates That Strong Action Is the Only Way To “Ensure Accessibility.”**

There is an unfortunate tone in the initial comments filed by some companies and industry trade associations. These can be characterized as making two broad points (1) strong Commission action is not necessary, because the industry is providing access on its own, and will do so without government intervention; and (2) accessibility cannot be provided or even planned for except at great expense and enormous cost to the nation.<sup>1</sup> For the disability community, this is an old song: both before and after the adoption of the ADA, this community has heard that it is difficult to provide access, that more will be accomplished without government intervention; or, that nothing can be done so government should tread lightly ... etc. etc. A short visit to the Department of Justice ADA compliance website suggests that there is nothing novel about the claims being raised here, and nothing unique about the burdens that are

---

<sup>1</sup> See, e.g., *Strategic Policy Research Evaluation of the Access Board’s Accessibility Guidelines*.

being placed on the telecommunications industry that would justify reading the requirements of Section 255 narrowly.

To the contrary, the telecommunications industry is now being asked to undertake an effort that many other industries undertook over a decade ago. The ADA recognized (among other things) that, as a simple matter of equity, public places had to be accessible to people with disabilities. In 1996, Congress extended the goals embodied in the ADA by recognizing that the telecommunications revolution had brought about a new type of public space: a virtual sphere to which access was just as critical as any physical structure. It is to the telecommunications industry's credit that this sphere has been created; but it is now the industry's responsibility --and the responsibility of the Commission -- to ensure that this sphere is accessible. While the prospect of requiring industry to achieve accessibility might seem frightening at this juncture, the AFB's experience with the ADA is a simple one: if the Commission requires accessibility, and makes it clear that it will move strongly to respond to complaints, access will be provided. If the Commission is unclear in its direction, industry will be encouraged to devote its efforts to legal avoidance rather than practical compliance. As AFB pointed out in its initial comments, this requires the Commission to look to the future, and to read Section 255 broadly, and not narrowly. And, it requires both the industry and disability community to recognize that accessibility and usability for people with disabilities is evolving and will improve as research, technical expertise and production methods begin to put a proper focus on the needs of these too long neglected consumers.

Many commenters alluded to advances in accessibility for people with disabilities brought about through the operation of a competitive marketplace.<sup>2</sup> While we appreciate the enormous advances made in telecommunications and information technology, and the degree to which many of those advances have, at least indirectly, benefited people with disabilities, we do

---

<sup>2</sup> *TIA Comments* at 2-3; *CEMA Comments* at 13; *Multimedia Telecommunications Association ("MTA") Comments* at 10, 12.



point out that the competitive marketplace has not ensured access for people who are blind or visually impaired. Modern telecommunications products are highly dependent on visual displays and rarely, if ever, provide audio output of the information shown on the visual display.

Indeed, many of the visual displays themselves are inaccessible to people with impaired vision because they are not sufficiently well-lit or customizable in terms of font size, contrast, character size etc. Increasingly, telecommunications devices employ touchscreens rather than tactually discernible, keys for input and control. While touchscreens are not necessarily impossible to make accessible for people who are blind or visually impaired, well-designed audio feedback is necessary to accomplish this accessibility.. Finally, although it is possible to design telecommunications products with communications ports to enable access by people with disabilities to a product's input and output via specialized, assistive technology, commercial devices rarely, if ever, include such ports or capabilities..

We are pleased to see some positive developments such as a greater effort by industry to provide accessible user manuals and other information in alternate formats. In addition, companies are beginning to seek opportunities to work with knowledgeable consumers who are blind or visually impaired and with knowledgeable organizations serving this population. However, in reviewing the comments in this docket, it is perhaps most important that the Commission keep in mind a recent quote from a case involving access to a sports stadium. In that case, the stadium owner and designer complained that they were being expected to consider design issues in an entirely different way than they had addressed those issues before. The court noted:

It is no answer to say this is the way we've always done it -- we've always discriminated against persons with disabilities. A prudent designer would have understood that, in enacting the ADA, Congress intended to do more than to simply maintain the status quo. Congress intended to establish higher standards for newly constructed structures, and to change the manner in which buildings were designed so that persons with disabilities could more fully share in the benefits that are available from public accommodations. Had Congress been satisfied with the status quo, there would have been no point in enacting the ADA.

Independent Living Resources v. Oregon Arena Corporation, 982 F. Supp. 698, 748 (U.S.D.C. Or. 1997).

It is true that, the FCC's proposed rules, and the Access Board Guidelines ask the telecommunications industry to think differently about design, development and fabrication issues. Understandably, that is something many wish to avoid; many argue against the FCC proposed rules and Access Board guidelines because they will require a different approach to the design and development of equipment or services. But, the proposed rules are not defective because they require a different approach to design, development and fabrication; they would be defective if they did not do so. To paraphrase Independent Living, had Congress intended to maintain the status quo, it would not have adopted Section 255.

**B. The Commission Must Be Particularly Wary of Industry Requests That Would Write Section 255 Out of Practical Existence.**

Several of the comments filed by industry representatives would have the effect of writing Section 255 out of the statute. Five positions are particularly notable.

1. The combination of the “accessibility,” “product line,” “fundamental alteration” and “cost recovery” tests proposed by some commenters would seriously thwart the goal of Section 255.

TIA, Motorola and others, perhaps inadvertently, ask the Commission to approve a series of standards and definitions that would seriously undermine Section 255. These include: (a) a definition of accessibility that departs from Access Board guidelines; (b) a proposal for a product line to accessibility; and (c) a vague "fundamental alteration" test. Taken together and combined with the proposals for cost recovery in the definition of readily achievable, the effect is stunning.

Under the TIA definition of accessibility, "telecommunications equipment is accessible to the extent that it enhances the ability of a person with a disability to use...the equipment...by

incorporating one or more of the following features..."<sup>3</sup> TIA incorporates the so-called 18-point checklist as the list of features. Providing any one of the features listed satisfies the accessibility requirement in toto. Further, the Commission is encouraged to interpret Section 255 as applying to people with disabilities as a "group." Applying this logic, a manufacturer could be considered to be in compliance under Section 255 if any one person with a disability can use a product.

It is also evident that as crafted, the equipment does not have to be fully accessible to anyone. For example, one satisfies the "features" test (and hence all accessibility obligations for all disabilities) by providing "at least one mode" for "input, control and mechanical functions" "that does not require user color perception." Output, display and control functions are treated separately, so that the equipment is deemed accessible as a whole under the TIA test even if the output, display and control of a device do require color perception. That is, under the TIA test, a product is accessible if it is partly accessible to a person with any disability.

Motorola's comments demonstrate quite clearly why the TIA definition makes no sense as a test of compliance. In discussing its "Pagewriter" paging system, Motorola argues that the Commission should not require it to incorporate features that would make the outputs accessible to people with impaired vision, even if that is "readily achievable," since the input device (the keyboard) would remain inaccessible (a position with which we disagree, since people who are blind or visually impaired are quite able to use keyboards, especially if simple, low-cost features such as a nib on the F and J key are included).<sup>4</sup> *Motorola Comments:*

---

<sup>3</sup> *TIA Comments* at 32

<sup>4</sup> Motorola's comment is more persuasive as an argument against the Motorola/TIA tests than it is convincing as a reason for reading the term "readily achievable" to mean that accessibility is not required at all unless a device can be made totally accessible. To take the Pagewriter 2000 as an example: if the output were accessible to the vision-impaired, it might remain an extremely attractive product even if the keyboard input devices were not fully accessible, particularly given the ability of the device to generate preprogrammed responses, and the ability to dock the device to PCs and MACs, as described on the exhibits to the Motorola Comments. As pointed out above, simple additions to keep might make the keyboard accessible, but other limitations might be overcome by returning pages using a cellular or pay phone. Except in very limited

People with disabilities would not benefit if a manufacturer were to incorporate some access features into a product, but could not incorporate others that would make the product actually useable...It would be a waste of resources and a poor result for consumers with disabilities...”<sup>5</sup>

However, under the TIA accessibility test, this “poor result” would be all that Section 255 required: under the TIA “accessibility” definition, the Pagewriter 2000 would be deemed accessible to people who are vision impaired (because the Pagewriter could be partly accessible to the deaf).

As strange as that position is, it leads to even more ironic results when the “accessibility test” is combined with the vague “product line” that manufacturers propose.

Under the “product line” test, the Commission is encouraged to think of equipment in “groups”<sup>6</sup> (though as we will argue elsewhere, no definition has been offered on the scope of product lines). A manufacturer will be deemed to have complied with its obligations under Section 255 if any piece of equipment in a product line is accessible.<sup>7</sup> (We raise several serious concerns about product line in Part II of these comments.) As a result, because the Pagewriter was deemed “accessible,” the entire product line would be deemed “accessible.” No pager would need to be fully accessible, even if it were easy to make every pager accessible to large portions of the disabilities community.

---

circumstances (where two products are truly entirely fungible), making a device accessible increases choice for individuals with disabilities. That is one of the goals of disabilities legislation.

<sup>5</sup> *Motorola Comments* at 17.

<sup>6</sup> As pointed out *infra*, the Commission does not have the authority to read the statute to apply to “groups” of equipment. In this section, we will assume for the sake of argument that it does have that authority.

<sup>7</sup> *Motorola Comments* at 7-8; 21-22.

Several commenters ask the FCC to import the fundamental alteration test from the ADA.<sup>8</sup> This test is one that is difficult to import into the telecommunications context, since it ordinarily applies to a fundamental alteration to the "core function" of a facility and not to the ability of facility users to perceive those functions:

The ADA does not require a public accommodation to "fundamentally alter the nature" of the goods or services being provided... However, it is essential to accurately identify the principal goods or services that are being provided, and to distinguish them from (1) services that are merely collateral to the primary goods or services...and (2) the means for perceiving those services (e.g., hearing, seeing, closed captioning, assistive listening devices), both of which a public accommodation may, in some instances, be required to alter in order to facilitate use of the facility and receipt of the principal goods and services by persons with disabilities.<sup>9</sup>

The test proposed by TIA and Motorola is defined in a way so that core functions can be defined in part in terms of perception -- the way in which a message is to be sent and received. As a result, the obligations set out in Section 255 can be limited by simply defining what ends a product is meant to serve, in a manner that can have the effect of mandating inaccessibility. Even where a standard is not obviously tied to perceptions, the fundamental alteration test, as described, presents enormous problems in application. If a manufacturer assumes that size is a "core function," for example, then anything that increases size - even nominally - is not required. And, since every manufacturer has made it clear that the process of adding and detracting features involves some trade-offs, it is not difficult to imagine that any change to "battery life," "size," or "features" would be considered a fundamental alteration. Indeed, none of the examples given by industry provide any guidance as to how this standard could be applied in any practical way, and suggest that the exception would quickly swallow the rule. When combined with a vague "product line" and an insufficient definition of accessibility, this standard has the effect of allowing manufacturers to define certain individual products in a line as "inaccessible" by

---

<sup>8</sup> *Motorola Comments* at 41-42; *TIA Comments* at 47-50.

<sup>9</sup> Independent Living, 982 F. Supp. at n. 42.

definition, while satisfying Section 255 obligations by providing a limited number of devices with highly constricted accessibility

Several commenters ask the Commission to adopt what would be a fourth nail in the Section 255 coffin: tests that would permit manufacturers to improperly allocate or account for costs associated with providing accessibility in order to avoid producing accessible equipment. There are several variations on these tests. Some commenters want to allow manufacturers to refuse to produce accessible equipment if the manufacturer decides that the costs associated with providing accessibility could not be directly recovered. Under this model one envisions manufacturers assessing the market impact of special cost “pass-throughs” on individual pieces of equipment reminiscent of the universal service charges. If a manufacturer decided this extra charge would not be desired by consumers, the product wouldn’t be produced. Another variation is to allocate all costs of providing accessibility to each division that produces a product, thus increasing the apparent cost of accessibility and making it appear that accessibility is not readily achievable.<sup>10</sup> These and other variations all suffer from the same fatal flaw. It is obvious that every entity in a competitive market must strive to recover costs and earn a reasonable profit. However, ADA tests are not applied in a way that allows covered entities to recover costs of providing accessible facilities solely from individuals with disabilities, or to avoid providing accessibility on the ground that the accessibility feature will not pay for itself. Accessibility costs are costs that are intended to be shared across all products and by all consumers.<sup>11</sup> Under

---

<sup>10</sup> *CEMA Comments* at 12; *USTA Comments* at 9-10; *Multimedia Telecommunications Association Comments* at 9. Not much better is the approach urged by TIA, under which the Commission is urged to adopt a “cost recovery” formula that would be almost impossible to apply in any sensible way, see *infra*.

<sup>11</sup> Indeed, the “group equipment” argument made by Motorola and TIA necessarily requires this result. Under this theory, the obligations of Section 255 are satisfied for all equipment by making some equipment accessible. It follows that the cost of accessibility is properly shared across the entire market for consumer electronics equipment and services, and not as special charges for particular devices. More to the point, because accessibility is a required feature of equipment, no different than the requirement that the equipment comply with applicable safety

this fourth prong, as some commenters have proposed it, a manufacturer could design products that would be unaffordable, decide not to produce them and yet satisfy Section 255 obligations.

To be sure, industry has plenty of anecdotes to suggest why each of the elements described above should be adopted. AFB is sensitive to those concerns and is proposing elsewhere in these comments ways in which the Commission could incorporate some of the elements of some of the industry comments, without fundamentally hampering accessibility. But, the overall impact of the proposed industry approach is patent, and fatal to accessibility. Any approach that the Commission adopts must be drafted so that all parts, working together, require accessibility.

2. Reading the terms “telecommunications” and “telecommunications equipment” narrowly ignores industry trends and will make future equipment less accessible.

Several commenters urge the Commission to read the terms “telecommunications” and “telecommunications equipment” narrowly.<sup>12</sup> That is not a viable option in the current marketplace. As the Commission has itself recognized, and as the AFB pointed out in its initial comments, the terms are evolving terms; the lines drawn between a telecommunications service and an information service are based in part on an analysis of how current equipment is used to complete transmissions. The telecommunications process, however, is changing every day. Even as these reply comments were being written, Motorola was announcing the following:

Motorola, Inc. announced today the formation of its Internet and Connectivity Services Division (ICSD), a new start-up services business focused on developing and providing integrated communication and information services that will simplify consumers’ lives. Motorola’s ICSD is part of the Internet and

---

codes, there is no reason to allow some sort of separate “accessibility” charge, any more than one permits a manufacturer to charge a consumer a “safety” surcharge for the privilege of including standard gear that prevents electrocution.

<sup>12</sup> See, e.g., *CEMA Comments* at 8-9.

Networking Group within Motorola's new Communications Enterprise organization, which was recently announced by Merle L. Gilmore, president of the Communications Enterprise.

Motorola ICSD will focus on developing solutions -- as well as enabling third parties to develop solutions -- that simplify consumers' communications, including speech-enabled services, web-based services, content services, in-vehicle services and paging information services. The creation of ICSD underscores the company's commitment to creating mobile productivity solutions as well as helping its carrier partners serve new markets and offer innovative services.<sup>13</sup>

What Motorola recognizes is that consumers want to be able to receive and transmit messages in whatever manner is most convenient at the moment the communication is required. The communication may take the form of voice over Internet; a voice page; a text page; or a wireless call connecting to the traditional PSTN, but in any case the communication will often involve or be related to the completion of a "transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received."<sup>14</sup> The equipment used in the communication may be designed to serve multiple functions, but it will be designed to route, originate or terminate calls, and will fit the definitions of "customer premises equipment" and "telecommunications equipment." To put it another way, consumers and companies, by their actions in the market, are extending telecommunications functions to new networks and equipment. The Commission's definitions must recognize that trend, and define the terms broadly, not

---

<sup>13</sup> "Motorola Creates New Division to Focus on Integrated Information and Communication Services for Consumers," Motorola Press Release, August 4, 1998, available at <http://www.mot.com/General/Press/PR980804.html>.

<sup>14</sup> 47 U.S.C. §153(43).



narrowly.<sup>15</sup> Otherwise, the effect of Section 255 will be to relegate individuals with disabilities to access to devices and to services that simply do not permit them to take full advantage of telecommunications networks.<sup>16</sup>

By contrast, several commenters (including, for example, CEMA) ask the Commission to make it clear that the accessibility requirement only applies to that portion of customer premises equipment or telecommunications equipment used for telecommunications.<sup>17</sup> What CEMA and others are effectively urging is that the Commission decide, for any piece of equipment, what functions are telecommunications functions and which are not. Given the speed with which software and equipment are changing, any distinctions that the Commission might draw would be inherently ephemeral and inconclusive. For example, the Commission has recognized that speed dialing functions are telecommunications functions. A cellular phone manufacturer might choose to integrate these speed dialing functions into a personal information manager (“PIM”) (several companies are doing precisely that). Today, one might think of PIMs as being unrelated to telecommunications; but by the end of this year, for some customer premises

---

<sup>15</sup> Some commenters suggest that the FCC has drawn a hard and fast line between telecommunications services and information services. As the AFB’s initial comments suggest, that is not the case; the FCC has indicated the lines between the services do change. What is more, a hard and fast line is inconsistent with the statute, which recognizes that some “information services” may be treated as telecommunications services based upon the functions served. *See*, n. 19, *infra*.

<sup>16</sup> The ADA reflects a basic judgment that providing accessibility is not simply a matter of providing *special* facilities for individuals with disabilities that separate individuals with disabilities from others in the community. Hence, the nondiscrimination provisions of Title III of the ADA (which requires removal of barriers to entry if readily achievable) are intended to provide equal opportunity to participate and equal opportunity to benefit “in the most integrated setting” appropriate. *ADA Title III Technical Assistance Manual Covering Public Accommodations and Commercial Facilities*, Department of Justice, at III-3.1000. Similarly, given the explicit statutory adoption of ADA terms in Section 255, the goal should be to ensure access to the same networks and equipment that are available to others, to the extent possible.

<sup>17</sup> *CEMA Comments* at 8-9.

equipment, the effective use of the speed dialing function may depend on accessibility to the PIM.

Given the integration of customer premises and telecommunications equipment with other equipment, there is no practical way for the Commission to sensibly subdivide equipment, as these commenters urge.<sup>18</sup> It makes far more sense to do what the statute requires on its face – ensure that customer premises and telecommunications equipment is fully accessible if “readily achievable.” The definition of customer premises equipment sweeps in the equipment employed to “originate, route or terminate” telecommunications, not just “that portion” of the equipment used to “originate, route or terminate calls.” Telecommunications equipment is likewise equipment that is “used” to provide telecommunications services.<sup>19</sup> If Congress had wanted to subdivide equipment, and apply the accessibility rules only to that part of equipment that is used for telecommunications it could have done so; it did not do so.

As a related argument, CEMA contends that the Commission should limit the definition of CPE so that it only applies to equipment attached to networks. AFB is not clear what network CEMA is referring to, but the definition of CPE does not support that request. The definition of CPE looks to the function performed by the equipment (the origination routing and termination of telecommunications) and is not tied to the network used, or to use in conjunction with “telecommunications services.”<sup>20</sup> As CEMA effectively points out, given this statutory definition, the term “CPE” must be read quite broadly.

---

<sup>18</sup> Similarly, there is no way for the Commission to develop a “core features” checklist as urged in the *Comments of the Multimedia Telecommunications Association* (“MTA Comments”) at p. 9, because such a list assumes the features do not change.

<sup>19</sup> By contrast, the definition of “information service” makes it clear that an information service is not to be treated like an information service when it is used “for the management, control, or operation of a telecommunications system” or the “management of a telecommunications service.” 47 U.S.C. §153(20). Hence, the fact that a service may, in the abstract, be considered an information service in some settings does not in itself determine whether the service must be accessible.

<sup>20</sup> *CEMA Comments* at 9. CEMA also requests that the Commission limit obligations under the “telecommunications services” standard to “common carriers.” The statute on its face is not so

3. It is critical that the Commission require manufacturers and service providers to develop compliance plans.

Under Title III of the ADA, the existence of a plan, and procedures for annual reevaluation of the plan serve as evidence of good faith efforts to comply with the obligation to remove architectural barriers if readily achievable.<sup>21</sup> In this rulemaking, several manufacturers have suggested that the process of determining whether accessibility is readily achievable will involve investigation of a complex industrial process. The Commission does not have the resources to conduct post hoc investigations into what was or could have been considered in this process without the aid of records.<sup>22</sup> In order to “ensure” that equipment is designed, developed and fabricated to be accessible, the Commission must adopt a regulatory plan that will permit it to dispose of complaints in a sensible and timely way.<sup>23</sup> As a practical matter, this means that a compliance plan must be developed and some records must be maintained. While industry argues that this will be costly,<sup>24</sup> industry does not even begin to discuss the obvious and enormous costs that would be associated with its own approach to the problem, which does not appear to require a compliance plan. Under the industry approach, if a piece of equipment was found to be inaccessible, one would need to examine every detail of the financial and engineering operations of the companies to establish inter alia, opportunity costs, engineering

---

confining.

<sup>21</sup> *Common Questions: Readily Achievable Barrier Removal, Americans with Disabilities Act Technical Assistance Updates from the U.S. Department of Justice* at 9 (August, 1996)(“Barrier Removal Update”).

<sup>22</sup> TIA Comments at 80-81. TIA for example, acknowledges the processes are complex, but discourages the use of outside experts to investigate them.

<sup>23</sup> Because manufacturers are required to “ensure” that equipment is accessible, and service providers are required to “ensure” that services are accessible, it is not enough for industry, or the Commission, to rely on market forces to achieve accessibility. Congress has decided that affirmative actions are required.

<sup>24</sup> TIA Comments at 28-29.

alternatives, design choices and trade-offs, and so on. One could look upon these and other proposals as simply a typical cynical Beltway effort to make a legislative provision too wieldy to administer.<sup>25</sup> As between what has been proposed by AFB and what has been proposed by industry, the AFB approach is plainly less burdensome and is the only workable alternative.

4. The Commission cannot allow industry to escape accessibility obligations simply because meeting the obligations involves some design trade-offs.

Several commenters suggest that the Commission regulations should ensure that accessibility is not provided at the expense of other equipment features and functionality. These commenters point out that, for any given piece of equipment, there are only a certain number of functions that can be implemented, given the necessary trade-offs that must be made in the design and fabrication process (how much memory can be installed, battery life, weight, size, etc.).<sup>26</sup>

AFB recognizes that equipment design does inherently involve trade-offs. But, it is precisely this fact that makes Section 255 so important. We don't ascribe bad motives to manufacturers -- in fact, we presume that in a world without limits, manufacturers would want to produce accessible equipment in order to reach every person that could be reached. The problem is that, in a world with limits, individuals with disabilities have found that the trade-offs are too often made in a manner that implements the latest mass market bell or whistle at the expense of accessibility. A manufacturer may always be able to say "if I don't have to implement accessibility, I can add a function that will be much more sellable to the portion of the public that is not disabled."<sup>27</sup> The point of Section 255 is that the trade-offs can no longer be made in a

---

<sup>25</sup> Among other things, for example, the various members of the industry propose that (1) the Commission adopt a complex economic formula based on detailed analysis of a company's assets, opportunity costs and financial records; (2) the Commission permit only circumscribed discovery of this information; and (3) the Commission require the complainant to carry the burden of showing that accessibility was readily achievable.

<sup>26</sup> See, e.g., *Motorola Comments* at 33-35.

<sup>27</sup> In the *MTA Comments* at 21, the MTA argues that this should be the rule. MTA states that, in response to a complaint, it is enough if a manufacturer responds "it wasn't readily achievable for

manner that essentially pushes individuals with disabilities to the end of the line. Hence, in its final rules, the Commission should make it clear that the accessibility obligations cannot simply be avoided on the ground that implementation of accessibility would prevent the implementation of another feature.<sup>28</sup>

5. Efforts by industry to discourage adoption of the Access Board Guidelines are based on a misunderstanding of those guidelines.

Many commenters attempt to discourage any effort to adopt the Access Board Guidelines by arguing that those guidelines effectively require the impossible: universal accessibility to all, including persons with multiple disabilities. This is simply not the case. While the Access Board guidelines are certainly designed to assist manufacturers and service providers in meeting their respective accessibility obligations, the Board has never required that every piece of equipment be immediately available to everyone. Indeed, everyone recognizes that at least for now, there will be instances where providing accessibility to one group may create a barrier to another. This is a non-issue and provides no basis for rejecting the Access Board Guidelines.

Commenters are simply confusing the process and results. What the portion of the Guidelines that have attracted criticism do is to require consideration of accessibility issues broadly throughout the design, development and fabrication process. This is really nothing more than an implementation of the requirements of the statute. The “readily achievable” standard requires consideration of accessibility issues; it requires implementation of accessibility solutions to the extent readily achievable, in the same equipment that is available to other members of the

---

me, because any available resources were focused on other priorities.”

<sup>28</sup> There is nothing startling about this proposition. The types of modifications that have been considered “readily achievable” under Title III also involve trade-offs that may affect the “features” offered by a public accommodation (provision of fewer stadium seats to accommodate wheelchairs, for example). We emphasize that we are not arguing that accessibility must come at the expense of any feature, just as in Title III, accessibility need not be provided no matter what the impact. Whether a particular trade-off was warranted or whether an alternative was available that could have been implemented without fundamentally affecting the marketability of the product can be considered in determining whether accessibility was readily achievable. However, given the MTA proposals, we believe some affirmative statement is needed to make the matter clear.

public.<sup>29</sup> The guidelines provide important practical aid that identifies matters that should be taken into account as part of the process of divining accessibility solutions. In Appendix A to these Comments, AFT submits a Report by Dr. Leonard Kasday (the “Kasday Report”) on the issues raised by TIA and others in objecting to the use of the Board Guidelines. As he explains, implementing the Board guidelines is practical and can be expected to result in significant benefits.<sup>30</sup> The guidelines should be adopted.

## **II. THE COMMISSION SHOULD REJECT MANY OF THE CHANGES SUGGESTED BY INDUSTRY TO DEFINITIONS PROPOSED IN THE NPRM.**

### **A. Changes Proposed To the Definition of Readily Achievable Are Too Vague To Apply and Are In Many Cases Inconsistent with the Statute.**

#### **1. The “Product Line” Approach As Proposed By Industry Is Too Vague To Apply.**

Several commenters ask the Commission to measure compliance across "product lines," rather than requiring manufacturers to ensure that all products are accessible. AFB is sympathetic to the issues being raised by manufacturers, but believes that it would be premature for the Commission to adopt a product line approach beyond what it has already proposed in the NPRM. The statute requires access to equipment, not product lines, though the Commission may elect to implement a defense that would allow a covered entity to respond to a complaint by showing that it has achieved accessibility in another of its offerings with similar price, features, functions, and availability. However, several concerns must be adequately addressed before the Commission implements any proposal for a product line defense, let alone further expand the

---

<sup>29</sup> This approach is consistent with the approach taken in implementing the “readily achievable” standard in other contexts. In the *Barrier Removal Update*, for example, the Department of Justice points out that while the goal is to remove all barriers, the department recommends establishment of “priorities for removing barriers” so that what can be accomplished is accomplished. Similarly, here, the planning process should be designed so that it examines accessibility issues broadly, and then results in accessibility to the extent possible.

<sup>30</sup> Dr. Kasday is an engineering specialist at the Institute on Disabilities/UAP at Temple University.

concept as TIA, Motorola and others propose. Assuming that several difficulties can be resolved, the Commission should make it clear that the first priority of manufacturers should be to make equipment within a product line accessible, and then to extend accessibility to each product within the line to the extent readily achievable.

a. *The proposed product line approach is seriously flawed.*

The "product line" approach, as proposed, is flawed both in terms of underlying factual assumptions and in terms of legal analysis.

The "product line" approach appears to be based on the following debatable presumptions:

- (1) the "FCC proposal adds exponentially to the complexity of the design process";<sup>31</sup>
- (2) constraints on technology and product design make it impractical to consider making individual devices accessible ;
- (3) products in product lines are fungible, except as to the manner in which the input and output are accessed;
- (4) each product in a product line will be just as available as any other product;
- (5) a product line approach would be easier to apply; and
- (6) a product line approach would be consistent with the statute and would facilitate consumer choice.

AFB does not believe that any of these assumptions are entirely accurate. As the Kasday Report at Appendix A explains, these assumptions ignore the benefits that would flow from adoption of the guidelines, overstate the difficulties of applying them, and ignore the problems with the proposed product line approach.

As to the first point, some accessibility features are of little or no cost to implement. For example, the matrix presented by Motorola in its initial comments indicates that there is no specific impact on product drivers to accomplish access to inputs for individuals with little or no color perception as specified in the Access Board guidelines. Similarly, putting a nib on the 5

---

<sup>31</sup> Motorola Comments at 32-33.

key of a telephone keypad requires no significant expense or difficulty. In addition, some manufacturers are producing highly-desirable, alternate versions of equipment for distribution in other world markets that incorporate features that would enhance accessibility.<sup>32</sup> In some cases, the process of incorporating "accessibility" will really involve very little difficulty or expense. In other instances, a reassessment of the desires and needs of the U.S. markets will result in the implementation of access features that will also prove popular. In other cases, what is learned in providing accessibility for one product can be easily transferred to others without triggering the "exponential" complications Motorola fears. A product line approach must not operate so as to limit the inclusion of readily achievable access throughout all products.

Second, some manufacturers present anecdotes to argue that technological limits make it impractical to require that individual products be made accessible. For example, in discussing its design matrix, Motorola discusses audio access for people who are blind or visually impaired: "Adding the voice chip adds a significant number of components and software, so it affects current drain, size, component count, cost, memory, etc."<sup>33</sup> The concerns may be warranted, especially today, but chip and memory capacity, battery strength and component sizes will undoubtedly continue to be reduced and software-based speech is already well developed. Simple additions to keyboards and keypads can make a product significantly more accessible. Further, as suggested above, this is hardly a static market. It is evident that the creativity of manufacturers is in fact making it possible to make products accessible to people with different disabilities in ways that could not have been imaginable years ago. There is every reason to suppose that developments in memory capacity, battery technology and the like will permit devices to be used in a variety of ways, by a variety of people, if industry makes that a priority.

---

<sup>32</sup> "The Best Wireless Phone on the Market," *Business Week*, August 10, 1998 at p. 60 tells the story of the Nokia 6100. "Developers built in rudimentary voice-recognition for Asia, where keyboards are problematic, and raised the ring volume so the phone could be heard on crowded Asian streets."

<sup>33</sup> *Motorola Comments* at 32.



Even if one assumes that full accessibility is not possible in every product, for everyone with every disability, it does not necessarily follow that (a) most disabilities cannot be accommodated; or that (b) the best approach is to provide accessibility to a few specialized products, rather than providing access to a broad range of equipment. The product line approach could be interpreted to allow entities covered under Section 255 to escape their duty to continually assess and improve the accessibility of their products and services.

As to the third point, it is not clear how any of the manufacturers would define a product line, and hence there is no way to determine how the product line test would be applied. Motorola seems to suggest that product lines might be defined as equipment sharing similar "features, functions, and price." Similarly, TIA would provide consumers with disabilities "with the same general range of choices as non-disabled consumers, such as telecommunications functions, features, quality and cost."<sup>34</sup> But, it is difficult to understand how this would actually be applied. We presume, for example, that every pager would not be considered part of the same product line since, among other differences, there are clear distinctions between the type of messages transmitted and the nature of interactivity available. However, the convergence of telecommunications functions into a single product (e.g., two-way transmission of voice and text messages), would suggest a broad range of potentially ill-defined product lines (assuming similar features, functions and price). In any event, AFB could not find a clear definition of what constitutes a product line in case law or in the comments submitted to this docket.<sup>35</sup>

---

<sup>34</sup> *TIA Comments* at 19.

<sup>35</sup> For example, TIA also offers at least three other definitions for product line, each with vastly different import. At page 12, it says the products must be "similar." At page 12 it also suggests a product line consists of "functionally equivalent, comparably priced" products accessible to these with differing disabilities. At page 17, the test is said to require a "representative sample of accessible products." If one looks outside the telecommunications context, one can find other efforts to define "product line." One case, for example, suggests that a product line consists of products that are "functionally interchangeable" with similar "physical characteristics" and aimed at the same consumer market. *A.G. Spalding Bros. Inc. v. F.T.C.*, 301 F.2d 585 (3d Cir. 1962) (distinguishing toy footballs, professional quality footballs and recreational equipment). But we have been unable to locate a uniform definition of "product line."

To be sure, it is important to include "features, functionality quality and price" in any product line definition. In addition, however, at least three other factors would have to be taken into account. Any product line approach would need to recognize that consumers with disabilities must have access to telecommunications equipment that is aimed at different market segments: the business professional in the office; the executive on the road; general consumer use at home and on the road, and so on. Availability should also be a test for whether a product fits within a product line -- measured in terms of the ability of an individual with disabilities to obtain service and repairs or replace the equipment and components of the equipment, and also how those equipment and components would function with other equipment and components in network environments. Finally, as suggested above, fungibility is an important consideration: is the product really equivalent to the inaccessible alternatives? In any case, without a clear definition, the "product line" approach leaves the Commission with no clear rule to apply; and the "product line approach" as proposed by industry does not provide a clear definition.

Fourth, a product line approach assumes accessibility will be provided through many different "niche" devices, and therefore must assume that industry will guarantee that it will maintain production, distribution and support for multiple, accessible products within its line of equipment in the market in order to satisfy the accessibility requirements. It seems unlikely that this will occur. As a result, if accessibility is incorporated into one piece of equipment in a product line, and that piece of equipment is discontinued (or not supported), accessibility would disappear for the entire product line. Of course, the FCC could step in and force manufacturers to sell particular pieces of equipment --but this seems far more intrusive than requiring companies to design for accessibility broadly.

Fifth, there is no reason to assume that the product line approach, even if it can be designed to be effective in enhancing accessibility for people with disabilities, would be any easier to apply than the so-called product-by-product approach. The FCC would have to decide what products were part of a product line. It would have to determine whether products were in fact fungible. The very problems of which the industry complains would still exist throughout

the design process and across an entire product line. Indeed, it would seem even more fragmented and difficult to apply the accessibility and "readily achievable" tests. If a design team decided to implement a new feature on a pager that was not accessible, it might then be required to design a different product that incorporated that same feature or include the new feature in several existing specialized products. In this way, every design change made in one (inaccessible) product would actually affect the design of multiple products. The introduction of one new product or feature could mandate the simultaneous introduction of multiple new products or design changes in several existing products. It is hard to imagine why this approach works better on the whole, and it may lead to an unfortunate consequence for people with disabilities: accessible equipment of potentially lesser value. The approach contained in the Telecommunications Act Accessibility Guidelines established by the Access Board provide direction on integrating the planning for disability access into the design process, so that over time, solutions will become standardized. That approach seems more likely to lead to greater overall strides in accessible design than the product line approach proposed by industry. Moreover, the Access Board approach avoids a problem Motorola and TIA never confront. Those companies assume that it is better for them to decide the most effective way to provide accessibility. Motorola believes it should not have to provide accessibility generally, for example, because it believes it will identify the "inherently better" access solutions.<sup>36</sup> How will companies in practice determine what products might be inherently better suited? People with disabilities occupy every sphere of society with a variety of needs. In fact, the Pagemaster mentioned here, or other similar products with highly interactive text transmission capabilities are likely to appeal to many people who are blind or visually impaired for the same reasons that they are marketed to the mass market. People who are blind or visually impaired do not have an "inherent" preference for voice messages, but rather a preference, or need, to be as functional and independent and involved in telecommunications as anyone else. However, for people with no

---

<sup>36</sup> *Motorola Comments* at 11.

usable vision, audio output of messages (or transmissions (including synthesized text-to-speech are highly important.

The “we know best” assumptions by some commenters are troubling, particularly since, as we have pointed out earlier, some commenters seem to have made assumptions about what the visually-impaired can and cannot use that are inaccurate. The statements affirm why inclusion of the Access Board's guidelines on including people with disabilities in market research and product testing is so imperative. How else will companies begin to learn about the real needs and capabilities of consumers with disabilities?

Finally, the product line approach is problematic because it is not consistent with the statute. TIA defends the proposal on two grounds. First, it argues that the term "equipment" in the statute could be read to apply to "groups" of equipment rather than individual pieces of equipment, and argues that Section 255 obligations can be met by providing access to some equipment, and not all equipment. Actually, the provision cannot be read as TIA urges and still make sense. If equipment was read in the plural, as TIA urges, then accessibility obligations would be satisfied by making any piece of equipment accessible, whether part of a product line or not, and indeed, whether available in the United States or not. The plain language indicates that all equipment must be accessible within the limits of ready achievability.

The second prong of the argument advanced by TIA and others points out that industry is only required to do what is "readily achievable," and asks the Commission to find that it is not "readily achievable" to make each product universally accessible, and to rule that only product lines need to be accessible. The argument is supported by suggesting an analogy between access to telecommunications products and access to stadiums and theaters, (an analogy the Access Board rejected).

As pointed out above, there is not a factual basis for adopting the broad presumption urged by industry. But it is also important to emphasize that the analogy on which the argument relies is misleading, and misses a central point of Title III accessibility rules.

Under Title III, each facility must be accessible - one does not escape obligations by pointing out that there is another stadium down the street that could be used. TIA and Motorola are apparently arguing that one can discharge obligations with respect to one piece of equipment by pointing to another. As important, even if one assumed that "product families" of multiple independent pieces of equipment are the analog to a single facility, the analogy would not support the approach taken here. The goal in accessibility cases is to make the entire facility accessible. The reason not every seat needs to be accessible in a stadium is that seats similar in location and sight line are fundamentally fungible. So long as there are seats scattered throughout a facility in sufficient number that people with disabilities have options that duplicate those available to persons who are not disabled, there is accessibility. Hence the "scooping rules" -- the rules that define what must be done to make a facility accessible -- are intended to ensure that individuals with disabilities have the same choices available to them as are available to persons that are not disabled, without imposing an undue burden on the facility owner. Further, it is a central goal of the rules to provide a fully integrated experience rather than to shuttle patrons with disabilities to special corners. Among other things, the rules require that areas especially designed to accommodate wheelchairs also include seating for companions who are not disabled.<sup>37</sup>

As formulated, the product line approach is not analogous to the approach to providing access to facilities. The product line approach, at least as proposed, allows manufacturers to discharge the access obligations imposed by Section 255 by segregating accessibility across a product line. The approach does not necessarily provide equivalent choices to individuals with

---

<sup>37</sup> In Independent Living, for example, the court concluded that Portland's Rose Garden had been designed to place patrons who use wheelchairs in an area that had been designed for equipment storage and spillover during sell-out games. Seat sectors had apparently been gerrymandered so that individuals with disabilities had a choice of seats at different prices, but all oddly segregated into less desirable locations. Even though there was access to the "product line" of seating offered, the experience offered to the audience members with disabilities was in no way comparable to the experience and opportunities offered to those who were not disabled.

disabilities. By definition, it restricts those choices to defined products which may or may not be useable. For example, individuals with disabilities may often find themselves in situations where they do not have a choice regarding the available telecommunications products. An employer, school or hotel may choose telecommunications products that are, unwittingly, inaccessible to an employee, student or guest with a disability. In these circumstances, it is likely that fruitless conflicts would persist between Ad's requirements for reasonable accommodation or auxiliary aids and Section 255 obligations for accessible products.

- b. Product line may be an effective alternative where accessibility is not readily achievable, but it cannot substitute for readily achievable accessibility.

We emphasize that we appreciate the industry's dilemma. A product line approach may be the best alternative if full accessibility is not "readily achievable"; but it is not a substitute for accessibility where accessibility can be readily achieved. The goal should be to provide consumers with disabilities with as many choices as are available to those who do not have a disability. It may be that there are other ways to formulate the product line approach that would avoid the objections raised by AFB and by others.<sup>38</sup> Indeed, AFB is willing to work with industry to explore possible approaches to addressing product line issues in particular cases. But at this point, as proposed by industry, it is not a workable alternative.

## 2. The Fundamental Alteration Test Does Not Work As Industry Suggests.

One of the most troubling issues raised by industry revolves around the "fundamental alteration" issues that were discussed in part in Part I.B. of these comments. AFB believes that in some circumstances, providing accessibility might require a "fundamental alteration" to a

---

<sup>38</sup> This is to be contrasted with the untenable suggestion (by CEMA at pp. 13-14, for example) that a manufacturer be permitted to avoid its own obligations under the law by showing that a product that is accessible can be purchased from someone else. The obligations of the statute run to every manufacturer and every service provider; the obligation is for each manufacturer to provide accessible equipment, and each service provider to provide accessible service; the "readily achievable" test is not, in other words, a "readily available" test.

product, and for that reason, providing accessibility might not be “readily achievable.” But we do not believe that the fundamental alteration test can be applied quite the way that industry asks the Commission to apply it. If the Commission adopted the standard, it would need to make it clear that the test applies only on a case by case basis, and only in limited circumstances.

Industry comments seems to assume that, if providing accessibility in one way would involve a fundamental product alteration, accessibility need not be provided at all. The fundamental alteration standard really only comes into play when accepting or rejecting a particular accessibility solution. It is not a standard that can be used to discharge the obligation to seek solutions, or to avoid any modifications.<sup>39</sup> It is typically applied on a case by case basis, examining unique facts and circumstances, and considering whether and to what extent accommodations could have been made.<sup>40</sup> The fact that one type of change might require a “fundamental alteration” does not end accessibility obligations. There is a duty to consider alternatives.

Second, the industry seems to assume that it is permitted to define what would constitute a “fundamental alteration.” However, the cases cited by industry and at note 36 make it very clear

---

<sup>39</sup> As an example of the fundamental alteration issue, the *TIA Comments* at 49 suggest that a cellular handset that also functions as a vibrating pager with caller ID might be developed for people who work on noisy shoproom floors. TIA further assumes that building a zoom feature into the device (so that it is accessible to those with impaired vision) would delay the speed with which a message could be displayed when the zoom was operating - making the device unusable for emergency situations and therefore fundamentally altering the uses to which the device could be put. However, the hypothetical assumes that the zoom feature cannot be enabled or disabled with a simple switch -an assumption that is hardly obvious. Further, it assumes that the delay caused by the zoom feature would in fact render it unusable for emergency situations -- again a presumption that cannot be made under a proper application of the fundamental alteration test.

<sup>40</sup> One of most notorious recent applications of the standard is discussed in Martin v. PGA Tour, Inc., 994 F. Supp. 1242 (U.S.D.C. Or. 1998). In that case, the PGA claimed that allowing a player to ride a cart rather than walk the course would “fundamentally alter” the professional golf match. The court accepted the PGA's claim that walking was required to add a physical dimension to the game. But the court emphasized that the fundamental alteration test requires a case by case application, and in the particular case, concluded that the change required to accommodate Martin would not so change the physical dimensions of the game as to fundamentally alter it.

that this is not the case. The question of what constitutes a fundamental alteration is a judicial one. There must be a clear product objective that is violated, the need for that product objective must be documented in terms of the core functions the product, and the effect of departing from the product objective – or modifying it to provide an accommodation – must also be documented. The mere possibility that accommodation may have some market effect on the product is not enough.<sup>41</sup> To take the example of the Nokia 610 discussed supra, the “fundamental alteration” test would not permit Nokia to avoid providing accessibility features because Nokia also wanted to add simple video games instead of accessibility features, and one precluded the other.

AFB believes that the Commission would be wise not to make the “fundamental alteration” test a part of its rules at this stage. However, were the Commission to adopt the standard, the Commission would need to properly confine the term so that industry does not assume that the test provides a broader exemption than it is intended to provide.

### 3. The Cumulative Cost Test Should Not Operate As Industry Proposes for Purposes of Determining Whether Accessibility is Readily Achievable.

Several commenters argue that, in deciding whether accessibility is “readily achievable,” the Commission must take into account the “cumulative cost” of compliance. These commenters are correct that under the ADA “readily achievable” test “cumulative costs” may be taken into account in particular circumstances. However, it is less clear that industry is proposing to apply the test as it is properly applied under the ADA.<sup>42</sup> Under the ADA, the “cumulative cost” test is applied in a way that permits a facility owner to implement accessibility in steps, after establishing priorities for access. The test ensures that in any given years, the burdens associated

---

<sup>41</sup> Installation of wheelchair seating affects the total number of seats available in a stadium and hence may reduce revenues by millions of dollars, and may affect the ability of persons who are not disabled to sit where they want. Despite these impacts, the seating requirement does not “fundamentally alter” the stadium.

<sup>42</sup> It is not clear that the test applies across disabilities, but we assume for purpose of argument it could.



with providing accessibility will not be inordinate, but the test also assumes that access will be provided over time. In sort, the test permits a form of “cost spreading.”

If a cumulative cost test were adopted in this context, it would need to be similarly confined. It could only apply in cases where a company has actually established a plan for providing accessibility over time, and established implementation priorities. In that context, one could then apply a cumulative cost test to determine whether, given the steps taken to provide accessibility for a disability, more was “readily achievable.”<sup>43</sup>

**B. Both For Purposes of Defining Responsibilities Under Section 255, and for Purposes of Determining Whether Access Is Readily Achievable, the Term Manufacturer Must Reach Parent Corporations.**

Several commenters ask the Commission to look only to the corporate division with responsibility for producing a product in determining whether a particular accessibility modification is “readily achievable.”<sup>44</sup> There are at least three reasons why this position must be rejected.

First, it ignores practicalities. A solution developed by one division for one product (a speaker jack, for example) will typically be useable in conjunction with other products.<sup>45</sup> Each product division does not “reinvent the wheel” every time it begins work on a device, nor does each division within a corporation maintain exclusive control over innovations, denying other parts of the corporation access to new developments. Yet, when it proposes to treat accessibility issues on a division by division basis, industry is asking the Commission to assume that accessibility solutions must pay for themselves product by product. Solutions that are in fact

---

<sup>43</sup> See Kasday Report, Appendix A.

<sup>44</sup> CEMA Comments at 12. TIA Comments at 50. TIA states that it has no objection to considering the parent’s resources under some circumstances, but argues this should be a case-by-case determination. To the contrary, because the parent is legally responsible, and for the reasons stated *infra*, the presumption the FNPRM makes in favor of including parental resources is appropriate.

<sup>45</sup> See Kasday Report, Appendix A.

easy for a large manufacturer to implement because they can be used in many products should be implemented, and would not be implemented under the industry approach.

Second, the approach assumes the parent corporation has no role in the “fabrication, development and design” of the products that it markets under its name. That claim is not supported by the anecdotes in the comments. As the comments make clear, the parent has the ultimate control...the power of the purse. It cannot avoid Section 255 responsibilities by withholding resources that are available to it. It would be as if a building owner argued that it was not readily achievable to install wheelchair access to the bathroom because the “plumbing division” only has the budget to fix leaks. That position would be quickly rejected, and so should the position of industry urged here.

Finally, several of the comments ask the Commission to look only to the divisions and subdivisions of manufacturing corporations so that large and small manufacturers are treated equally under the rules. That request betrays a fundamental misunderstanding of the term “readily achievable” as defined in the ADA. The term, as applied and interpreted, does treat large and small organizations differently, because what is readily achievable for one may not be readily achievable for another. Because the term “readily achievable” is defined in the same way as in the ADA, the same result follows here; one cannot ignore the size of the parent corporation, as many manufacturers urge.

As a related matter, several commenters argue that the FCC should only hold manufacturers and service providers responsible for matters over which they have “direct control.” Some commenters, for example, argue that manufacturers have no control over software, so that CPE manufacturers cannot be held responsible if their equipment is inaccessible because of software deficiencies. (At the same time, these commenters point out that modern equipment is software-dependent, so that the software is actually an integral part of the product).<sup>46</sup> The “direct control” argument assumes that manufacturers and service providers

---

<sup>46</sup> The importance of treating software as part of the equipment is underlined by the Kasday Report.

cannot provide for accessibility through the contracting and purchasing processes – a patent absurdity. The manufacturer must bear full responsibility for its product. This does not mean that others are not responsible under Section 255. In the ADA Title III, context, most courts that have considered similar issue concluded that anyone who plays a significant role in the design or construction of a facility is held responsible for ensuring accessibility. The same should be true here. That ensures that gaps in coverage are not created by finger-pointing (I had no control, that person did). The position raised by some commenters ensures the law will not fully protect individuals with disabilities.

### **III. THE COMMISSION HAS AND SHOULD RETAIN BROAD AUTHORITY TO RECEIVE AND REVIEW COMPLAINTS, AND TO WORK CREATIVELY TO FOSTER ACCESSIBILITY.**

The NPRM properly proposed a method for filing and addressing complaints that was designed in part to make it relatively simple to address accessibility issues. In addition, the Commission asked whether it would be wise to establish a clearinghouse for information about accessibility. Many of the commenters have asked the FCC to establish more rigid rules that would limit complaints under Section 255, and discouraged establishment of an information clearinghouse. AFB believes that the Commission was on the right track.

#### **A. The Commission Should Not Adopt Strict Standing Standards.**

Several commenters urge the Commission to adopt rules that would prevent persons from filing complaints unless the persons were disabled, or representing individuals with disabilities. The Commission should not adopt standing requirements. The main reason proffered for developing standing requirements is to discourage competitors from using the complaint process to obtain information about competitors' products or processes. However, that problem can be addressed on a case by case basis, if a manufacturer believes a particular complainant has no particular interest in filing a complaint. As AFB pointed out in its initial comments, there are a wide range of organizations that may have a legitimate interest in filing complaints. Employers

have independent ADA obligations; they may have an interest in filing complaints because the availability of accessible communications devices may help them satisfy their own obligations. Indeed, we suspect that allowing employers to file complaints may be the one of the best ways to encourage compliance. As AFB also pointed out, there may be cases where one manufacturer or service provider could provide accessible equipment or services, but cannot because another company has failed to meet its obligations. Allowing companies to file complaints will actually allow the Commission to determine who is responsible for inaccessibility, and may avoid unnecessary consumer complaints. Thus, consumers, other manufacturing and service companies, employers, and non-profit organizations representing any of these groups have legitimate interests in assuring that Section 255 requirements are satisfied. Accordingly, adoption of a standing requirement as proposed by commenters at this juncture would be ill-advised.

It is not legally required. Typical standing cases involve instances where Congress has restricted the universe of parties who may file a complaint. In the absence of a Congressionally-mandated standing requirement, the most that is required is that complainant have an interest in the dispute. The Commission's decision not to impose a specific standing requirement merely reflects the obvious point that there are many people (besides individuals with disabilities) who have an interest in assuring that services and equipment are accessible. These not only include the associations, industries, manufacturers and others discussed above. It also includes the friends, relatives and colleagues who may wish to communicate with individuals with disabilities. It was therefore entirely appropriate for the Commission to ensure that all those who benefit from the effective implementation of Section 255 have the opportunity to file complaints.

**B. The Commission Could Adopt a “Statute of Limitations” On Filing Complaints, But It Would Have To Be Carefully Tailored, and Is Probably Unnecessary.**

Several commenters proposed that the Commission adopt a statute of limitations on product complaints. However, the comments fail to recognize that there may be very good

reasons why a complaint is filed long after a product is purchased. For example, a manufacturer may offer an upgrade to existing equipment where the upgraded functions are not themselves accessible, or where the upgrade renders existing functions inaccessible. The Commission's regulations need to recognize that accessibility issues may develop during the life of a piece of equipment.

Any limitations period would have to apply (a) from the time the consumer purchased the product; (b) to a product that has not been affected by any company upgrade or alterations; (c) that has not been affected by any change in networks, other equipment or services. It would have to be for a period that is long enough to allow the consumer to gain familiarity with the device, and to determine, without filing a complaint, whether it is useable or not. As a practical matter, however, it is not clear that a limitations period is actually necessary. The concerns of the manufacturers could largely be satisfied, and the Commission could avoid foreclosing legitimate complaints, by requiring a complainant who files more than two years after a piece of equipment is purchased to explain why the filing was delayed.<sup>47</sup> This may focus the complaint and result in "weeding out" truly frivolous complaints.

### **C. The Commission Should Establish An Information Clearinghouse.**

For reasons that are not entirely clear, several commenters oppose any efforts by the Commission to establish a compliance clearinghouse. We believe that a clearinghouse should be established. The information provided by the Department of Justice at its website provides critical information both to companies that are seeking to understand their obligations, and consumers who wish to understand their rights. Having a clearinghouse for Section 255 information generally available will allow the Section 255 process to function more smoothly over the long haul.

---

<sup>47</sup> At least one commenter asked the Commission to adopt a six-month statute of limitations. That would be self-defeating, since it would mean that a person would almost always have to file a complaint to preserve legal rights, rather than attempt to resolve issues informally outside the Commission's processes.

**D. Damages Are An Important Compliance Tool and Are Available.**

In its NPRM, the Commission tentatively concluded that damages were available to remedy failures to comply with Section 255. Several commenters – most notably Ameritech – argue that damages are not available under the Section 255, because that Section 255(f) (“No Additional Private Rights Authorized”) states that “nothing in this Section” shall be construed to authorize a private right of action to enforce any requirement or regulation. The Commission was right. The “no private right of action” language appears intended to prevent the courts from implying that individuals with disabilities have an independent right to commence a court action under Section 255, but both the title of the Section (referring to additional rights) and the language of the section (referring to nothing in “this Section” rather than nothing “in this Act”) indicate that Congress did not intend to limit other existing remedies, including damage remedies. Thus, Section 206, 207 and 209 of the Communications Act make carriers liable for damages for violation of the Act, permit complaints to be filed with the Commission, and permit the Commission to award damages based on those complaints. Contrary to Ameritech’s argument, these provisions provide ample authority for the award of damages to persons injured by violations of Section 255.<sup>48</sup>

**E. The Burden of Proof Must Fall Upon Equipment Manufacturers and Service Providers.**

Some commenters would place the burden of proof under Section 255 on the complainant.<sup>49</sup> This is clearly inconsistent with the statute, and it is impractical as well. Under the statute, the legal mandate is for accessibility -- the “readily achievable” standard is a defense against a failure to provide accessible equipment and services. To put it another way, it is not up to the individuals with disabilities to prove that he or she is entitled to accessibility; it is up to

---

<sup>48</sup> See also, Section 414 (remedies in the Act are not exclusive, and are in addition to remedies existing at common law and by statute). In addition, any limitations of Section 255 do not apply to Section 251(a)(2), as AFB explained in its initial comments.

<sup>49</sup> See, e.g., MTA Comments at 20-21.

manufacturers and equipment providers to provide accessible services and equipment unless access is not readily achievable.<sup>50</sup> This result is logical. Whether accessibility is readily achievable will be determined on a case by case basis, considering factors unique to each manufacturer or service provider. It is only the manufacturer and the service provider that will be in a position to show that accessibility was not readily achievable, and it is therefore on those entities that the burden of proof should fall. Any other approach will render Section 255 a dead letter, because (except in the most obvious cases) complainants cannot be expected to be able to show what is and what was not readily achievable.

As a related matter, several commenters ask the Commission to adopt an inordinately complex cost standard for determining whether accessibility is readily achievable. It is not even clear that the analyses that are proposed (consideration of opportunity costs, for example) could actually be performed in any sensible way, since the analysis by definition depends on untestable assumptions about consumer responses to products that have not been built and exposed to the marketplace. In any case, the standards the industry has proposed require the Commission to undertake an analysis at least as complex as that involved in rate of return ratemaking – and that process is hardly designed to lead to rapid resolution of complaints.<sup>51</sup> As AFB has proposed in its initial comments, the FCC must adopt standards that it can apply; the standards that the industry has proposed cannot be applied, and certainly cannot be applied in any manner that would result in accessibility within a reasonable period of time.

---

<sup>50</sup> The readily achievable standard has been consistently read in other contexts to place the burden on the affected company to show that providing accessible accommodations was not “readily achievable.”

<sup>51</sup> TIA, at n. 30 of its comments, argues that the Commission should not consider net costs (costs of the accessibility features, minus benefits received through its incorporation) because benefits are purely speculative. Whatever the validity of this criticism, it is evident that the inclusion of the cost factors listed by industry are even more speculative, since those factors depend on assumptions as to the marketability and profits of products that were never even created.

**IV. ADOPTION OF THE ACCESS BOARD GUIDELINES AND CONTINUED EXAMINATION OF CURRENT REGULATORY AND STATUTORY REQUIREMENTS PERTAINING TO INFORMATION SERVICES ARE CRITICAL TO PROVIDING ACCESSIBILITY.**

**A. Adoption of the Access Board Guidelines Will Encourage Innovation and the Free Flow of Product Information.**

As a more general manner, industry has argued that if the FCC adopts the rules proposed by the Access Board, as proposed in the NPRM, innovation will be stifled and product information will not freely flow.

As the comments suggest, there is no reason to suppose innovation will be stifled. While the guidelines require industry to take a new approach to design, the actual language of the guidelines encourages innovation. Moreover, because the obligations are clear (unlike the guidelines that TIA has proposed as an alternative) they should encourage development of new products that incorporate accessibility features as a matter of course, as opposed to efforts to create segregated and specialized equipment.

There is also no reason to suppose that the free flow of information will be discouraged. TIA seems to posit that only under its guidelines would a manufacturer advertise that a product is accessible by promoting its access features. Why this is so hard to discern. Under the Access Guidelines, one could advertise the accessibility features that do exist (accessible for the hearing impaired, etc.), but could not make broad claims about universal accessibility. That is, information would have to be provided in a meaningful format. To put it another way, the Access Board guidelines not only provide a useful model for planning a product, the guidelines provide a useful way for consumers and manufacturers to describe product features.

**B. To Provide Continuing Protection for the Disabled, the Commission Does Need to Continually Reexamine Its Treatment of Information and Telecommunications Services.**

In its working paper, "Digital Tornado: The Internet and Telecommunications Policy" the Commission pointed out that public policy questions arise from the need to maximize the public



benefits that the Internet brings to Society.<sup>52</sup> The paper goes on to state: "Government policy approaches toward the Internet should therefore start from two basic principles: avoid unnecessary regulation, and question the applicability of traditional rules."<sup>53</sup>

We believe that the paper is on the right track and the Commission should continue this examination...including its examination of the relation of the Internet and telecommunications services. One example of the new direction for telecommunications services is illustrated in a recent report that British Telecom and AT&T will abandon circuit switching in favour of a system called internet protocols (IP). This is a method of transmitting data efficiently and at high speed without tying up any particular pathway. ..."IP has established itself as the key design point or architectural force for the 21st century network the partners say." The article continues: "With the new network in place, staff could have access to the same services anywhere in the world simply by plugging into a phone socket and dialing a local number."<sup>54</sup>

It is the seamless nature of the new regime of telecommunications services which will allow this example to work so well. The observations about these services in the comments filed by representatives of the disability community make the continuation of the Commission's task even more urgent, especially within the context of Section 255. SHHH points out that:

As services merge, the distinctions between enhanced, basic and adjunct to basic are superficial at best. Communication via technology, in whatever form, whether phone calls over the internet or e-mail received on a phone handset, must be governed by Section 255 if access is to be achieved in the manner it was intended.<sup>55</sup>

The National Association of the Deaf correctly asserts:

---

<sup>52</sup> "Digital Tornado: The Internet and Telecommunications Policy," Federal Communications Commission, Office of Plans and Policy (March, 1997) at p. ii

<sup>53</sup> Id.

<sup>54</sup> Cane, Alan, The Financial Times, "Trying to Connect You"(July 28,1998) p. 13.

<sup>55</sup> *Comments of the Self Help for Hard of Hearing People*, WT Docket No. 96-198.

...it cannot be more obvious that access to advanced service features is basic in purpose and use for individuals with disabilities. This holds true for interactive and audiotext telephone services as well as for other services labeled as enhanced such as voice mail and electronic mail.<sup>56</sup>

Communications technologies have converged or are converging into powerful, multi-purpose and flexible telecommunications devices and services. These devices combine numerous communication and information storage functions previously accomplished separately. The ability to use this technology is rapidly becoming the new literacy challenge for people who are blind or severely visually impaired. The Commission will not be able to separate these functions, and does not need to do so. The mandate to ensure that “telecommunications services,” “telecommunications equipment” and “customer premises equipment are accessible provides ample authority for protecting individuals with disabilities as AFB and others in the disabilities community have pointed out. It is critical that the Commission exercise that authority.

---

<sup>56</sup> *Comments of The National Association of the Deaf*, WT Docket No.96-198.

## CONCLUSION

The NPRM properly proposed to adopt Access Board Guidelines and to establish other rules designed to implement Section 255's mandate. That mandate requires affirmative action to ensure that products and service are accessible to individuals with disabilities. While the NPRM needed to be strengthened, as AFB and others pointed out in initial comments, it was headed in the right direction. In many respects, the modifications proposed by industry would effectively render Section 255 meaningless. Those proposed modifications must and should be rejected.

Respectfully submitted,



Joseph Van Eaton  
MILLER & VAN EATON, P.L.L.C.  
1155 Connecticut Avenue, NW  
Suite 1000  
Washington, DC 20036  
(202) 785-0600

Paul W. Schroeder  
Director, AFB Midwest/National Technology Program  
American Foundation for the Blind  
401 N. Michigan Avenue, Suite 308  
Chicago, IL 60611  
(312) 245-9961

Alan M. Dinsmore  
Senior Governmental Relations Representative  
American Foundation for the Blind  
820 First Street, NE, Suite 400  
Washington, DC 20002  
(202) 408-8171

Scott Marshall  
Vice President, Governmental Relations  
American Foundation for the Blind  
820 First Street, NE, Suite 400  
Washington, DC 20002  
(202) 408-8172  
June 30, 1998

AFB-7016\01-Genl\AFB-Reply Comments Dkt. 96-198v4.doc

## APPENDIX A

### REPORT OF LEONARD R. KASDAY, Ph.D ON TIA COMMENTS FILED IN RESPONSE TO NPRM IN WT DOCKET 96-198

#### BACKGROUND OF DR. LEONARD KASDAY

Dr. Kasday is an engineering specialist at the Institute on Disabilities/UAP at Temple University. He previously had 20 years experience in user interface design at AT&T (AT&T Labs, Bell Labs, and American Bell), where he worked on Internet services, web accessibility standards, telecommunications relay service, VRML data display, speech controlled communication systems, artificial intelligence, medical picture and data communication, rapid prototyping, and office automation. He is chair of the Evaluation and Repair Interest Group in the World Wide Consortium's Web Accessibility Initiative. Dr. Kasday received his Ph.D. and Physics and M.S. in Electrical Engineering from Columbia University, and pursued 5 years of post-doctoral research in Experimental Psychology at Columbia University and New York University. He holds 9 patents in the areas of user interface, communication, and disability related technology.

#### SUMMARY OF REPORT

As noted in the FCC NPRM, there is a wide range of opinions on whether Section 255 should apply to particular products or to groups of similar Products. TIA and others have argued that it should apply across a product line.

In my opinion, 255 should apply to individual products, in view of the following considerations:

1. New technology trends which, if properly exploited, would greatly reduce the cost of accommodation.
2. The many cases where the effort is minimal because of the simplicity of the accommodation.
3. The reduced time to investigate one a product once results of investigating other, similar products have been obtained.
4. The many disadvantages of having just a few isolated accessible products.
5. The additional problems caused by combining a product line approach with TIA's proposed accessibility test.

6. The additional problems caused by combining a product line approach with a "retrospective" approach to accessibility.

Note also that the additional factors mentioned in items (5) and (6), viz. TIA's proposed Accessibility test, and the "retrospective" approach to accessibility, are problems in themselves, as discussed below.

## DISCUSSION

I'll now discuss these points in more detail.

1. New technology features which, if properly exploited, reduce the cost of accommodation.

Accommodation is often discussed as if accommodating each new product is a new, individual effort, making it necessary to restrict accessibility to just one or a few members of a product line. This is countered, however, by a number of relevant trends, most of which have long existed in personal and laptop computers, and which are appearing in devices even as small as pagers.

- a. Programmability.

Devices are being designed with spare memory (either battery powered RAM, or Flash memory, which requires no power for storage). Accessibility features can potentially be loaded into this memory, eliminating the need to add memory, cost, and battery drain to the base version (i.e. non-accommodated version) of a device (although a person with a disability may want to add memory to load other programs). Thus, the interaction of access features with memory and battery life for the base product is eliminated. Programmability is of course inherent in all desktop and laptop personal computers. It is also appearing or planned to appear in platforms suitable for smaller devices such as personal digital assistants, cell phones, and pagers. One of these systems, Sun Microsystems' Java, provides a "pluggable look and feel" which, as they point out, could allow, e.g., an audio menu to replace a visual one (a feature of potential value to non-disabled users as well). Other programmable systems such as Palm Pilot, Windows CE, Psion, and Motorola's FLEX, have also designed to range of user needs (although accessibility has not been explicitly addressed). For example, Motorola's FLEX platform Whitepaper (v.1.0, September 1997, p.5), speaks of "the needs of specific individual lifestyles" and describes the FLEX system as

"designed specifically to enable 'soft' products that can be easily upgraded

to meet these user needs while at the same time being optimized for small communicators."

We have therefore the opportunity to extend this approach to accommodate the needs of many people with disabilities, in a readily achievable manner, without compromising the features needed to manufacture competitive devices, or restricting access to just a few members of a product line.

b. Multimedia capability.

Many desktop and laptop computers, as well as platforms for smaller devices (e.g. Java, Windows CE) have audio input and output built in. This permits some degree of speech recognition and text to speech to be added via software alone, without the cost of adding specialized "speech chips". General text to speech and speech recognition devices are already commonly available in desktop and laptop computers. It should be possible to add at least simple recorded speech to small devices (e.g. the numbers 0 through 9). This minimizes the need to restrict access to just a few "speech capable" members of a product line.

c. Communication between devices.

Communication between devices, using serial cables and infrared links (e.g. using the IRDA standard) are becoming more widespread. Both are common in desktop and laptop models, and IRDA is already appearing in many smaller devices (e.g. Java, Nokia, Windows CE, FLEX). These links could potentially provide an interface to accommodation devices for compatibility (as required by the Access Boards Connectivity requirement 1193.51). It would also permit audio output without audio speaker jacks (an accommodation which, in Motorola's experience, can add significantly to production cost). For example, digital speakers are already available which connect to the USB (Universal Serial Bus). Suitable modulation of an infrared output would also drive the IR wireless headphones now available in the consumer market.

d. Standardized user interface objects.

Software platforms typically provide the software developer with a standard set of user interface "objects" such as menus, text entry fields, etc. Once these objects are made accessible, applications using the objects gain accessibility with little or no additional effort. Microsoft's "active accessibility" (AAA) provides a software interface between the objects and accessibility software such as screen readers. AA is available in their desktop and laptop versions of Windows 95, 98, and NT (although it is not now available for the CE version used in smaller devices). Sun's Java System has such an interface built-in, plus, as noted above, a means for "direct accessibility" by allowing the objects to be realized in various ways, e.g. a menu could be rendered visually or audibly.

I've discussed these objects in the context of programmable devices; but their use is simply good engineering practice which can be expected in non-programmable devices as well.

The existence of these user interface objects counters the argument that providing access for each individual product is a new, individual effort. Once standard software objects are used and accessibility is provided for those objects, all products inherit the access features with little additional work.

It is crucial therefore for accessibility of user interface objects to be built in to all platforms. It should include means to interface to accessibility software and hardware, and also options for direct accessibility.

e. Preferences.

Software platforms typically have facilities for users to set standard preferences (e.g. colors, font size), plus preferences specialized to an application. This also reduces the cost and effort needed to provide settings needed for accessibility. And the provision for adding application specific preferences would reduce the software overhead needed to e.g. disable or change timeouts.

Another way to control preferences is available if updates to a program are available via download e.g. into Flash memory. The user could download different versions (e.g. with timeouts disabled). This would eliminate the need to have a way of changing preferences on the device.

The flexibility offered by the ability to set preferences minimizes the need to restrict access to a limited number of products in a product line.

2. Many cases where the effort to include accessibility is minimal because of the simplicity of the accommodation.

I'll now discuss some additional objections to the arguments about the cost and difficulty of accessibility. These do not depend on the technology trends mentioned above.

Manufacturers are understandably concerned about accommodations that require extra memory or other chips to a very small device, such as speech recognition and synthesis (although, as noted above, these capabilities can be added to some systems with no extra hardware at all).

But some design efforts are surely often quite small, e.g. a nib on the 5 key or options to turn off flashing and timeouts, which should require only a minimal amount of code.

And there are other accommodations which don't appear in the table which would have negligible impact on design efforts. For example, to accommodate people who are blind, if a device has a strip of membrane buttons which a blind person cannot detect, the device's case can be molded with a raised border around the button strip and dots or other tactile cues marking each button. Or if the device is toggled on and off by a button that normally beeps only once when pressed, the device could be made to beep twice when toggled on. To accommodate people with vision impairments, labels could be designed with high contrast to be more easily seen, either directly or through a magnifying lens.

To accommodate people who are deaf, if a device already has a screen or visual indicator (e.g. LED), audible signals (e.g. error beeps) emitted during operation can be accompanied by a visual indication. To accommodate people with limited dexterity, simple software features can be provided that e.g. turn off autorepeat or allow someone to press two buttons sequentially instead of simultaneously.

All these accommodations would have little or no interaction with the attributes of cost, size, part count, battery life, etc. All they require is to consider and incorporate low cost or no-cost features or design decisions:

- a. in the physical design (e.g. tactile features in the molding)
- b. in the software.

The software features are particularly inexpensive when the trends described in section 1 above (programmability etc.) are available, and would be of minimal cost even when the device is hard-coded (e.g. providing an extra beep).

Of course, the impact of these features must still be accounted for, and systematic approaches like the interaction matrix suggested by Motorola can be useful representations of the interactions. But it must be kept in mind that many interactions, like the ones described above, are orders of magnitude smaller than the types of interactions, like adding speaker recognition or synthesis, that cause the greatest concern.

- 3. Knowledge gained investigating accommodations for one product will lessen the time to investigate the next product, especially if the products are similar.

This point was made above in connection with the use of standard user interface objects in software design. The point is more general. Experience and knowledge gained investigating accommodations for one product will generally carry over to other products. Arguments that imply that effort must be duplicated for each product investigated don't take this into account.

- 4. The disadvantages of having just a few isolated accessible products.

TIA and others argue for a product line approach to compliance. Motorola, for example, asserts that some products are inherently more suitable to particular disabilities. This is indeed sometimes true. It does not therefore follow, however, that only the products thought to be most suited for a disability need to accommodate that disability.

There are a number of disadvantages to limiting accommodation in this way:

- a. Providing different products for different disabilities fails to accommodate people who have more than one disability.
- b. The provided product could tend to be a more expensive model, having features like speech storage or synthesis, which aren't always needed for accommodation. For example, a manufacturer might have an inexpensive wireless phone with the on/off toggle feature, described earlier, that only requires an extra beep to make it accessible. However, instead of simply adding that beep to the simple model, the manufacturer would require the blind consumer to buy a more expensive, deluxe model that had e.g. recorded speech prompts for all functions.



- c. If there are different models in a product line, they are tailored to differing user needs, including needs unrelated to disability. Adapting only one model for each disability deprives the disabled customer of the choices available to other consumers.
- d. An employer, e.g. a small business, that already had equipment for employees that didn't happen to accommodate a new employee, would have to buy new equipment to accommodate the disabled employee. It might also add to the cost of supporting the disabled users, since they would have a different models, and would require different training. Special procedures might also be needed for the disabled employee because she or he would be using a device with different capabilities.
- e. A non-disabled person, who became disabled, and who already owned equipment would incur the cost of buying new equipment if the model he or she already owned didn't happen accommodate his or her disability.
- f. A person visiting e.g. a hotel that provides telecommunications in guests' rooms would be less likely to find that the equipment met his or her needs. Thus, offering only one accommodated product model per product line to accommodate disabilities has many disadvantages compared to making all models as accessible as can be readily achieved.

5. Additional problems created by TIA's proposed accessibility test.

The FCC NPRM (paragraph 73) proposes to define accessibility

"in the broad sense to refer to the ability of persons with disabilities to actually use the equipment or service by virtue of its inherent capabilities and functions."

In the context of this definition, the recommended functions in the Access Board Guidelines (NPRM paragraph 74) are "part" of the definition (paragraph 75).

TIA, in contrast, proposes to use the Access Boards guidelines

"to identify those product features that enhance the accessibility of products for persons with disabilities."

It appears that with this approach, the manufacturer simply notes the features, and leaves it up to the consumer to decide if the product will be accessible.

There is indeed value in providing the consumer with information in this way. However, this is not sufficient.

One problem with this approach is that it only requires, for each function, that there be one mode in which the requirement is provided, and it examines modes independently. For example, it requires one mode with controls that are accessible to people with low vision, and at one mode in

which the information display is accessible to the same people. But the modes are not necessarily required to be the same or to work in conjunction. So a person with low vision might find that while the display was accessible in one mode, the controls were accessible only in another mode. So the device would be unusable by people with low vision, even though it would seem accessible when the TIA's accessibility methodology was applied. In addition, this approach does not address the needs of people who have more than one type of disability. The difficulty would be compounded if this definition of accessibility were to be combined with a product line approach to accessibility. Taken together, these could lead to patchwork of accessibility features, where one feature is found in one mode of one product, a second feature is found in another mode of that product, and a third feature is found in a different product altogether. It could well be difficult for the user to find a full set of access features working all together in a single mode of a single product. And even if the user did find the right combination in a product, it might not be a product that met his or her other needs as well as a different member of the product line.

Another difficulty with this approach is that once a manufacturer found a mode of a product providing a function, that manufacturer would no longer be incented to examine other products for the same function. This means that very simple opportunities for access, like an extra beep or a raised dot, which could make the difference between a product being usable or not, would never be found.

Therefore, it is not sufficient to simply "check off" features or consider them in isolation. Actual usability by persons with disabilities must be evaluated, as proposed in the FCC NPRM, and all products must be examined.

6. The additional problems caused by combining a product line approach with a "retrospective" approach to accessibility.

Products and product features developed for the general market are sometimes useful to people with disabilities, even though there was no consideration of access when the product was designed. Companies often look retrospectively at existing products to identify, document, and publicize such features. These are valuable efforts, which should be applauded. However, we must be careful to avoid relying on this "retrospective" type of accommodation. It would compound the problem noted above of a patchwork of access features across product lines and product modes. Features emerging from a retrospective study are likely to be even more randomly distributed, and less likely to appear together in a single mode of a single product.

For example, consider a caller id with speech announcements included for the convenience of sighted users. The device could easily be unusable for lack of a feature that told the user when it was on or off, even though other products made by the same manufacturer had that needed feature. This is an example of an accommodation of negligible cost that would likely become obvious in the simplest usability study, but that could easily be missed using the procedures TIA proposes.

The full and detailed information that TIA proposes to give the customer would be valuable. However, it is not sufficient: access must be considered throughout the product development cycle and the criterion for success must be actual usability, as the FCC NRPM states.

\\MVE1\MVE\_DATA\client\AFB 7016\01-Genl\AFB Reply Comments Dkt 96\_198v4.doc